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A CEDAR BARK BEETLE OUTBREAK

PETERSBURG RANGER DISTRICT - NORTH TONGASS NATIONAL FOREST

August, 1960

G. L. Downing, Entomologist

INTRODUCTION

On August 19, 1960 A. W. Johnson, Assistant District Ranger, Petersburg Ranger District and G. L. Downing of the Alaska Forest Research Center made an aerial and ground inspection of a cedar bark beetle outbreak on Kuiu Island. This inspection was in response to a letter of August 11 by H. L. Simpson, District Ranger, Petersburg Ranger District, reporting insect activity in this area.

The flight on August 19 was made out of Petersburg and included portions of the southern half of both Kuiu Island and Kupreanof Island. Landings for on-the-ground examinations of infested trees were made in Kell Bay and Petrof Bay, both on Kuiu Island.

INSECT AND HOST SPECIES

The infestation involves two host trees, western redcedar (Thuja plicata) and Alaska-cedar (Chamaecyparis nootkatensis), both of which are attacked and killed.

The insect responsible was identified by Dr. W. H. Anderson of the Insect Identification Section of the Agricultural Research Service as Phloeosinus squamosus Blkm., a cedar bark beetle. While other insect species may be involved, this species was primarily responsible for the death of all trees examined. Attacks by this insect apparently are confined to the main stem and larger limbs of the host. All but trees in the smaller diameter classes were successfully attacked and killed.

THE OUTBREAK

This outbreak extends over several thousand acres but is confined to the scrub cedar stands that occupy the poorly drained slopes and muskeg bottomlands. Although no attempt was made to estimate the total number of trees involved, it is safe to say that many thousands of trees are dead or dying as a result of this outbreak. Throughout this area and over much of the range of cedar in Southeast Alaska there is evidence of past losses. Whole hillsides are literally covered with cedar snags.

There is no indication that the infestation is dying out. Most of the trees examined contained healthy brood. Currently infested trees were abundant.

Chemical control measures would likely kill the broods in infested trees but the number of trees involved and the widespread nature of the infestation would make any control effort extremely costly. If a preliminary resource evaluation shows that control might be desirable, then a more thorough survey of the outbreak will be needed.

DISCUSSION

The cause of this, and past, outbreaks is unknown but there are several possible explanations. Cedar is adversely affected by drought and other unfavorable moisture relationships. Extensive damage to cedar stands was reported[1/], apparently caused by a bright warm period in the spring while the soil was still frozen. Such a condition might weaken trees over extensive areas and make them susceptible to insect attack. Bark beetle populations could build up in large numbers in this type of material and spread to apparently healthy trees in the same areas.

This is not the only explanation, of course. It is possible that cedar on poor sites reaches an age when its health deteriorates rather rapidly. This would invite bark beetle attacks that could build up and spread to all age classes.

Another explanation is that this particular cedar bark beetle may actually attack healthy trees and that fluctuations in its abundance are primarily independent of major factors affecting the health and vigor of the host trees.

If this latter case be true then it is an exception to the rule that cedar bark beetles are not considered aggressive and persistent killers of healthy trees.

1/ H. E. Andersen. Silvical Characteristics of Alaska-cedar. Station Paper No. 11. Alaska Forest Research Center. October, 1959.